REMARKS

Status of the Claims

Claims 1-6, 9, 11-17, and 19-28 are pending, with claims 1, 12, 20, and 24 being independent. Claims 7, 8, 10, and 18 have been canceled without prejudice to or disclaimer of subject matter contained therein. Without conceding the propriety of the rejections, claims 1, 9, 12, 20-22, 24, 25, and 27 have been amended to even more clearly recite and distinctly claim the invention. Support for the amendments may be found throughout the specification including, for example, at page 3, paragraph [0011]; page 4, paragraph [0017]; page 10, paragraph [0043]; and pages 11 – 12, paragraph [0047]. Therefore, no new matter has been added. Applicants respectfully request the Examiner to reconsider and withdraw the outstanding rejections in view of the foregoing amendments and following remarks.

Withdrawal of the Finality of the Office Action

Applicants respectfully request that the finality of the Office Action be withdrawn. Applicants respectfully submit that the new reference, Williams, was submitted in an Information Disclosure Statement under 37 C.F.R. § 1.37 (c) accompanied by the statement specified in § 1.37 (e), ***not*** a fee. The Williams patent was cited in a Dutch search report dated September 1, 2003 and the IDS was filed on November 12, 2003. Accordingly, the Williams patent was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the IDS. Therefore, no fee was due.

Williams was used in the present Office Action in a new ground of rejection. Applicants respectfully submit that it is clear that the information was submitted to the Office promptly after it became known and was submitted prior to a final determination on patentability. (see MPEP 609). Accordingly, Applicants respectfully request that the finality of the Office Action be withdrawn.

Claim rejections under 35 U.S.C. § 112

Claims 1-28 are rejected under 35 U.S.C. § 112, first paragraph for enablement. Applicants respectfully disagree with the rejection; therefore, this rejection is traversed.

Without conceding the propriety of the rejection, independent claims 1, 12, 20, and 24 have been amended. In particular, independent claims 1 and 12 have been amended to specify that the biocide is an aldehyde and the neutralizing agent is a nitrogen-containing compound selected from the group consisting of primary amines, secondary amines, ammonia, amino alcohols, and mixtures thereof or the biocide is an alkyne and the neutralizing agent is a hydrogenation catalyst and H_2. Independent claim 20 has been amended to specify that when the biocides are aldehdyes, the neutralizing agent is a nitrogen-containing compound selected from the group consisting of primary amines, secondary amines, ammonia, amino alcohols. Independent claim 24 has been amended to specify that when the biocides are alkynes, the neutralizing agent is a hydrogenation catalyst and H_2.

Applicants respectfully submit that the specification is more than adequately enabling for the scope of presently claimed deactivatable biocides (i.e., aldehydes and alkynes) and the presently claimed neutralizing agents (nitrogen-containing compounds selected from the group consisting of primary amines, secondary amines, ammonia, amino alcohols, and mixtures thereof when the biocide is an aldehyde and a hydrogenation catalyst and H_2 when the biocide is an alkyne).

With regard to the deactivatable biocides, Applicants teach that a "deactivatable biocide" is a biocide that can be deactivated or neutralized once the danger of microbial growth has ended. (page 4, paragraph [0017]). Applicants specifically teach that the deactivatable biocides can be aldehydes or alkynes and provide examples of both aldehydes and alkynes. (page 8, paragraph [0033] and [0035] and page 9, paragraph [0038]). Applicants teach in detail how the aldehydes act as biocides (page 8, paragraph [0034] – [0035]), and Applicants also teach in detail how alkynes act as biocides (page 8, paragraph [0036] – page 9, paragraph [0038]).

With regard to the effective amount of the deactivatable biocides, Applicants teach that the biocides are added to cooling water in an amount effective to prevent visual growth of microorganisms for at least 10 days under ambient conditions when exposed to a certified inoculant. (pages 6 – 7, paragraphs [0030] – [0031]). Applicants provide an instrument and a method for measuring turbidity. (Id.) Applicants further specify that the effective amount of deactivatable biocide added to the cooling water is at least 1 ppm, preferably at least 10 ppm, and more preferably at least 100 ppm.

Therefore, Applicants teach aldehydes and alkynes as deactivatable biocides and then teach preferred aldehydes and alkynes. Applicants further provide a detailed test by which the effective amount of biocide may be determined and further specify exemplary preferred effective amounts of biocide according to the present invention.

With regard to the neutralizing agent, Applicants teach that a "neutralizing agent" is a compound or reaction conditions that may be used to react with a deactivatable biocide or to complex a deactivatable biocide to destroy the biocides's antimicrobial activity. (pages 5-6, paragraph [0024]). Applicants further teach that the neutralizing agent irreversibly deactivates the biocide, i.e., the deactivatable biocide does not re-generate to become active upon release to the environment. (Id.) Applicants teach in detail that when using an aldehyde as the deactivatable biocide, the neutralizing agent is a nitrogen-containing compound selected from the group consisting of primary amines, secondary amines, ammonia, amino alcohols, and mixtures thereof (page 10 – 11, paragraph [0043]). Applicants then provide examples of such nitrogen-containing compounds. (Id.) In addition, Applicants teach in detail that when using an alkyne as a biocide, the neutralizing agent is a hydrogenation catalyst and H_2. (page 10, paragraph [0041]). Applicants then provide examples of suitable hydrogenation catalysts. (Id.)

With regard to the effective amount of neutralizing agent, the specification teaches that it is the amount to irreversibly deactivate the biocide. Applicants teach several ways to determine this effective amount. Applicants teach that the biocides and neutralizing agents may be measured in the cooling water by gas chromatography, wet chemical test, mass spectroscopy. Applicants also teach that small tests using mixtures of cooling water containing deactivatable biocide and neutralizing agent may be prepared and tested with certified inoculants to determine the optimum amount of neutralizing agent. (page 11, paragraph [0045] – page 12, paragraph [0047]). As presently claimed, Applicants teach in detail that in microbial growth tests, the cooling water containing deactivatable biocide with neutralizing agent added supports visible growth of microorganisms when exposed to a certified inoculum within 10 days. Applicants provide a test by which visual growth of microorganisms after 10 days under ambient conditions when exposed to a certified inoculant is to be measured. (pages 11 – 12, paragraph [0047]). Applicants also provide an instrument and a method for measuring turbidity. (Id.)

Accordingly, the effective amount of the neutralizing agent is that amount that after added will provide water that supports visible growth of microorganisms when exposed to a certified inoculum within 10 days. Applicants further specify that the effective amount of neutralizing agent is approximately 1 mole of neutralizing agent per mole of biocide because if excess neutralizing agent is used, the neutralizing agent may act as a biocide because the neutralizing agent may be toxic. (page 11, paragraph [0041]).

Therefore, Applicants teach nitrogen-containing compounds selected from the group consisting of primary amines, secondary amines, ammonia, amino alcohols, and mixtures thereof as neutralizing agents when the biocide is an aldehyde and a hydrogenation catalyst and H_2 when the biocide is an alkyne. Applicants further teach preferred nitrogen-containing compounds and preferred hydrogenation catalysts. Moreover, Applicants provide a detailed test by which the effective amount of neutralizing agent may be determined and further specify an exemplary preferred effective amount of neutralizing agent according to the present invention.

Accordingly, Applicants respectfully submit that more than adequate guidance has been provided for using aldehydes as the deactivatable biocide and nitrogen-containing compounds selected from the group consisting of primary amines, secondary amines, ammonia, amino alcohols, and mixtures thereof as the neutralizing agent. Applicants further respectfully submit that more than adequate guidance has been provided for using alkynes as the deactivatable biocide and a hydrogenation catalyst and H_2 as the neutralizing agent. Therefore, more than adequate guidance has been provided to enable one of ordinary skill in the art to practice the presently claimed invention. Applicants submit that test of enablement is not whether experimentation may be necessary. Applicants respectfully assert that experimentation is permissible, if it is merely routine or if the specification provides a reasonable amount of guidance with respect to the direction in which the experimentation should proceed. *In re Wands*, 858 F.2d 731, 737, 8 U.S.P.Q. 2d 1400, 1404 (Fed. Cir. 1988). As such, Applicants respectfully submit that with the detail of the teachings provided in the specification as summarized above, one of skill in the art may practice the presently claimed invention with at most routine experimentation. Accordingly, Applicants respectfully request withdrawal of the rejections under 35 U.S.C. § 112, first paragraph.

Claim rejections under 35 U.S.C. § 103(a)

Claims 1-7, 10, and 11 were rejected under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over U.S. Patent No. 5,641,411 ("Williams"). Applicants respectfully disagree with the rejection; therefore, this rejection is traversed.

Williams discloses a method of detoxifying biocide which is toxic to aquatic life comprising contacting the biocide with a ***water soluble organic thiol compound***. Williams teaches that the method of detoxifying using water soluble organic thiol compounds is especially useful to treat industrial effluent comprising 5-chloro-2-methyl-4-isothazolin-3-one; 2-methyl-4-isothazolin-3-one; 4,5-dichloro-2-n-octyl-4-isothiazolin-3-one; 2-n-octyl-4-isothiazolin-3-one; benzisothiazolone; 2-methyl-4,5-trimethylene-4-isothiazolin-3-one; methylenebisthiocyanate; 2,2-dibromo-3-nitrilopropionamide; bromochlorodimethylhydantoin: glutaraldehyde; hypobromous acid, hypochlorous acid, hypochlorite; 1,4-bis(bromoacetoxy)-2-butene; 4,5-dichloro- 1,1 -dithiacyclopentene-3-one; and 2-bromo-2-nitropropane- 1,3-diol (Column 1, Line 66 – Column 2, Line 12 and Claim 2). Williams further teaches that 3-isothiazolones ring-open in the presence of organic thiols. (Column 1, Lines 60 – 65). Williams teaches that certain of the biocides are most effectively detoxified with the water soluble organic thiols when base is combined with the organic thiol compound. (Column 2, Lines 45 – 51). The examples of Williams demonstrate deactivation of 3-isothiazolones with cysteine, mercaptopropionic acid, mercaptoethanol, and methylmercaptopropionate as the water soluble organic thiols.

In contrast, the presently claimed invention relates to a method of inhibiting growth and reproduction of microorganisms in a cooling water system used in an industrial process comprising the use of a deactivatable biocide and a neutralizing agent, wherein the deactivatable biocide is an ***aldehyde*** and the neutralizing agent is a nitrogen-containing compound selected from the group consisting of ***primary amines, secondary amines, ammonia, amino alcohols***, and mixtures thereof or the deactivatable biocide is an ***alkyne*** and the neutralizing agent is a ***hydrogenation catalyst and H_2***. In the presently claimed method the neutralizing agent irreversibly deactivates the biocide before or upon disposal of the cooling water, such that after the neutralizing agent is added, the cooling water supports visible growth of microorganisms in

less than 10 days when exposed to a certified inoculum, growth media, and rapidly biodegradable substance under ambient conditions.

The detoxifying agents of Williams are water soluble organic thiol compounds. These detoxifying agents are disclosed and exemplified as detoxifying isothiazolones by ring-opening. Applicants respectfully submit that the combination of isothiazolones and water soluble organic thiol compounds of Williams is significantly different than the presently claimed combination of deactivatable biocides (aldehydes and alkynes) and neutralizing agents (nitrogen-containing compound selected from the group consisting of primary amines, secondary amines, ammonia, amino alcohols, and mixtures thereof and a hydrogenation catalyst and H_2). Applicants further respectfully submit that the presently claimed neutralizing agents are signficantly different chemically than water soluble organic thiol compounds.

Applicants respectfully submit that Williams does not disclose or suggest a method of inhibiting growth and reproduction of microorganisms in a cooling water system comprising the use of a deactivatable biocide and a neutralizing agent, wherein the ***deactivatable biocide*** is an ***aldehyde*** and the ***neutralizing agent*** is a nitrogen-containing compound selected from the group consisting of ***primary amines, secondary amines, ammonia, amino alcohols***, and mixtures thereof or the deactivatable biocide is an ***alkyne*** and the neutralizing agent is a ***hydrogenation catalyst and H_2***. As such, Applicants respectfully submit that Williams does not disclose or suggest using an aldehyde as a deactivatable biocide in combination with a neutralizing agent that is a nitrogen-containing compound selected from the group consisting of primary amines, secondary amines, ammonia, amino alcohols, and mixtures thereof. Applicants further respectfully submit that Williams does not disclose or suggest using an alkyne as a deactivatable biocide in combination with a neutralizing agent that is a hydrogenation catalyst and H_2.

Accordingly, it is respectfully submitted that for at least the above-recited reasons Willimas does not disclose or suggest all the claim limitations. Therefore, withdrawal of the rejection under 35 U.S.C. §102(b), or in the alternative, under 35 U.S.C. §103(a) is respectfully requested.

Claims 1-7, 10, and 11 were rejected under 35 U.S.C. §103(a) as being unpatentable over Union Carbide in view of acknowledged prior art for the reasons of record set forth in the prior

Office Action in further view of Williams. Applicants respectfully disagree with the rejection; therefore, this rejection is traversed.

Union Carbide teaches that gluteraldehyde can be deactivated chemically by adding 2 – 3 parts (by weight) of sodium bisulfite (Page 8). Union Carbide also teaches that glutaldehyde concentrations of up to 2% active may be deactivated by the addition of a sufficient amount of aqueous sodium hydroxide to maintain a pH of 12. Union Carbide further teaches that the treated solutions of gluteraldehyde should be returned to neutral pH by the addition of an inorganic acid, e.g., hydrochloric acid, before disposal by appropriate means.

As explained in the response filed on June 26, 2003 and the response filed on October 21, 2003, the reaction of gluteraldehyde with sodium bisulfite and with sodium hydroxide is a ***reversible*** reaction. In support of the fact that the reaction of gluteraldehyde and sodium bisulfite is reversible, Applicants submitted a copy of Morrison and Boyd, *Organic Chemistry*, 2nd Edition, pages 639-641. Morrison and Boyd teaches that "[s]odium bisulfite adds to most aldehydes and to many ketones...to form bisulfite addition products." Morrison and Boyd clearly teaches that "[l]ike other carbonyl addition reactions, this one is ***reversible.***" (emphasis added). As Morrison and Boyd further teaches that "[a]ddition of ***acid*** or base destroys the bisulfite ion in equilibrium with the addition product, and regenerates the carbonyl compound," Applicants respectfully submit that adding an inorganic acid to the addition product of sodium bisulfite and gluteraldehyde, as in Union Carbide, destroys the addition product of gluteraldehyde and sodium bisulfite regenerating the gluteraldehyde biocide. (emphasis added). Accordingly, Union Carbide teaches ***reversible*** deactivations of gluteraldehyde, and Union Carbide teaches ***regenerating*** the carbonyl compound by adding an inorganic acide before disposal by appropriate means.

As described above, Williams discloses detoxifying isothiazolones by ring opening using ***water soluble organic thiol compounds***.

In contrast, the presently claimed invention relates to a method of inhibiting growth and reproduction of microorganisms in a cooling water system used in an industrial process comprising the use of a deactivatable biocide and a neutralizing agent, wherein the deactivatable biocide is an ***aldehyde*** and the neutralizing agent is a nitrogen-containing compound selected from the group consisting of ***primary amines, secondary amines, ammonia, amino alcohols,***

and mixtures thereof or the deactivatable biocide is an ***alkyne*** and the neutralizing agent is a ***hydrogenation catalyst and H_2***. In the presently claimed method the neutralizing agent irreversibly deactivates the biocide before or upon disposal of the cooling water, such that after the neutralizing agent is added, the cooling water supports visible growth of microorganisms in less than 10 days when exposed to a certified inoculum, growth media, and rapidly biodegradable substance under ambient conditions.

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. MPEP § 2143.

It is respectfully submitted that even if there were some suggestion or motivation to combine Union Carbide and Williams and a reasonable expectation of success, Union Carbide and Williams even when combined do not teach or suggest all the claim limitations. As described above, Union Carbide discloses reversibly deactivating gluteraldehyde with sodium bisulfite or sodium hydroxide. Also as described above, the detoxifying agents of Williams are water soluble organic thiol compounds and the combination of isothiazolones and these water soluble organic thiol compounds is significantly different than the presently claimed combination of deactivatable biocides and neutralizing agents. In addition, the presently claimed neutralizing agents are signficantly different chemically than water soluble organic thiol compounds.

Accordingly, neither Union Carbide nor Williams discloses or suggests a method of inhibiting growth and reproduction of microorganisms in a cooling water system comprising the use of a deactivatable biocide and a neutralizing agent, wherein the ***deactivatable biocide*** is an ***aldehyde*** and the ***neutralizing agent*** is a nitrogen-containing compound selected from the group consisting of ***primary amines, secondary amines, ammonia, amino alcohols***, and mixtures thereof or the deactivatable biocide is an ***alkyne*** and the neutralizing agent is a ***hydrogenation catalyst and H_2***. As such, Applicants respectfully submit that neither Union Carbide nor Williams discloses or suggests using an ***aldehyde*** as a deactivatable biocide in combination with a neutralizing agent that is a nitrogen-containing compound selected from the group consisting of

primary amines, secondary amines, ammonia, amino alcohols, and mixtures thereof. Applicants further respectfully submit that neither Union Carbide nor Williams discloses or suggests using an ***alkyne*** as a deactivatable biocide in combination with a neutralizing agent that is a ***hydrogenation catalyst and H_2***.

Accordingly, it is respectfully submitted that even if Union Carbide and Williams are combined, they do not teach or suggest all the claim limitations. Therefore, withdrawal of the obviousness rejection is respectfully requested.

Claims 1-7, 9-17, and 19-23 were rejected under 35 U.S.C. §103(a) as being unpatentable over Union Carbide in view of acknowledged prior art, U.S. Patent No. 4,686,317 ("Quann) and U.S. Patent No. 3,642,578 ("Hitzman") for the reasons of record set forth in the prior Office Action in further view of Williams.

As described above, Union Carbide teaches ***reversibly*** deactivating gluteraldehyde by adding sodium bisulfite or sodium hydroxide. Also as explained above, Union Carbide teaches ***regenerating*** the carbonyl compound by adding an inorganic acid ***before*** disposal by appropriate means.

As described above, Williams discloses a method of detoxifying a biocide with a water soluble organic thiol compound.

Quann relates to a process for removing oxygenated impurities from a Fischer Tropsch hydrocarbon stream. In no way does Quann relate to or address biocides, microbial growth in cooling water, and/or environmental and treatment concerns for disposing of biocide treated industrial water.

Hitzman relates to a process for microbial synthesis of cellular production products from oxygenated hydrocarbon feedstock containing aldehydes in addition to other oxygenated hydrocarbons comprising adding nitrogen-containing compounds to the feedstock. This process is used to produce proteins, amino acids, gums, and other valuable fermentation products. In no way does Hitzman relate to or address biocides, microbial growth in cooling water, and/or environmental and treatment concerns for disposing of biocide treated industrial water.

In contrast, the presently claimed invention relates to a method of inhibiting growth and reproduction of microorganisms in a cooling water system used in an industrial process

comprising the use of a deactivatable biocide and a neutralizing agent, wherein the deactivatable biocide is an ***aldehyde*** and the neutralizing agent is a nitrogen-containing compound selected from the group consisting of ***primary amines, secondary amines, ammonia, amino alcohols***, and mixtures thereof or the deactivatable biocide is an ***alkyne*** and the neutralizing agent is a ***hydrogenation catalyst and H_2***. In the presently claimed method the neutralizing agent irreversibly deactivates the biocide before or upon disposal of the cooling water, such that after the neutralizing agent is added, the cooling water supports visible growth of microorganisms in less than 10 days when exposed to a certified inoculum, growth media, and rapidly biodegradable substance under ambient conditions.

In certain embodiments, the presently claimed invention relates to ***integrated*** methods of inhibiting growth and reproduction of microorganisms in a cooling water system for a Fischer Tropsch facility. In the integrated processes, a Fischer Tropsch synthesis is performed and Fischer Tropsch-derived liquid products and Fischer-Tropsch derived deactivatable biocides are isolated from the process, wherein the Fischer Tropsch derived deactivatable biodes are aldehydes or alkynes. An effective amount of the Fischer-Tropsch derived biocide is added to the cooling water of the Fischer Tropsch process. An effective amount of a neutralizing agent is added to the cooling water to irreversibly deactivate the biocide before or upon disposal of the cooling water. When the Fischer Tropsch derived biocide is an aldehyde, the neutralizing agent is a nitrogen-containing compound selected from the group consisting of primary amines, secondary amines, ammonia, amino alcohols, and mixtures thereof and when the Fischer Tropsch deactivatable biocide is an alkyne, the neutralizing agent is a hydrogenation catalyst and H_2. In the presently claimed methods the neutralizing agent irreversibly deactivates the biocide before or upon disposal of the cooling water, such that after the neutralizing agent is added, the cooling water supports visible growth of microorganisms in less than 10 days when exposed to a certified inoculum, growth media, and rapidly biodegradable substance under ambient conditions.

In one embodiment of this integrated method when the Fischer Trospch deactivatable biocide is an aldehyde, the claim further recites the steps by which aldehydes are formed from the Fischer Tropsch product stream. In another embodiment of this integrated method when the

Fischer Tropsch deactivatable biocide is an alkyne, the claim further recites the steps by which the alkynes are formed from the Fischer Tropsch product stream.

The specification teaches that the integrated Fischer Tropsch processes of the present invention provide ***many benefits and efficiencies***, as described at, for example, page 15, paragraph [0057] and page 16, paragraph [0060].

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. MPEP § 2143.

Applicants maintain their assertion that there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine Union Carbide with Quann or Hitzman. Applicants further respectfully submit that there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine Williams with Quann or Hitzman. The teachings of Union Carbide and Williams do not suggest or provide any motivation to combine any feature of Union Carbide or Williams with Quann or Hitzman. Union Carbide is an industrial manual related to glutaraldehyde. Williams discloses a method of detoxifying a biocide with a water soluble organic thiol compound. Quann relates to removing impurities from a Fischer Tropsch process with no teaching or suggestion of biocides, microbial growth in cooling water, and/or environmental and treatment concerns for disposing of biocide treated industrial water. Hitzman relates to producing proteins, amino acids, gums, and other valuable fermentation products from oxygenated hydrocarbon feedstocks with no teaching or suggestion of biocides, microbial growth in cooling water, and/or environmental and treatment concerns for disposing of biocide treated industrial water. Accordingly, Applicants respectfully submit that these documents are significantly different areas of technology and there is ***no*** suggestion or motivation to combine Union Carbide and Williams with Quann, and Hitzman. The Office Action has merely attempted to abstract individual teachings from the different pieces of prior art to create the combination upon which the rejection of the present claims was based.

This is an error as a matter of law. *W.L. Gore & Associates v. Garlock, Inc.*, 721 F.2d 1540, 1552, 220 USPQ 303 312 (Fed. Cir. 1983).

Further, Applicants respectfully submit that even if there were some suggestion or motivation to combine the reference teachings and a reasonable expectation of success, the cited art references even when combined do not teach or suggest all the claim limitations.

With regard to independent claim 1, Applicants respectfully submit that even if combined the cited art does ***not*** disclose or suggest a method of inhibiting growth and reproduction of microorganisms in a cooling water system comprising the use of a deactivatable biocide and a neutralizing agent, wherein the ***deactivatable biocide*** is an ***aldehyde*** and the ***neutralizing agent*** is a nitrogen-containing compound selected from the group consisting of ***primary amines, secondary amines, ammonia, amino alcohols***, and mixtures thereof or the deactivatable biocide is an ***alkyne*** and the neutralizing agent is a ***hydrogenation catalyst and H_2***. Even if combined, it is further respectfully submitted that the cited art does ***not*** disclose or suggest adding an effective amount of a neutralizing agent to the cooling water to ***irreversibly*** deactivate the biocide before or upon disposal of the cooling water. Even if combined, it is respectfully submitted that the cited art does ***not*** disclose or suggest adding an effective amount of a neutralizing agent to the cooling water such that after the neutralizing agent is added, the cooling water supports visible growth of microorganisms in less than 10 days when exposed to a certified inoculum, growth media, and rapidly biodegradable substance under ambient conditions. Claims 2 – 6, 9, and 11 are dependent upon claim 1 and thus recite further limitations.

Accordingly, it is respectfully submitted that even if Union Carbide is combined with Quann, Hitzman and Williams, the resulting combination does not disclose or suggest all the claim limitations of claim 1 or claims dependent thereon.

Therefore, withdrawal of the obviousness rejection is respectfully requested.

With regard to independent claim 12, Applicants respectfully submit that even if there were some suggestion or motivation to combine the reference teachings and a reasonable expectation of success, the cited art references even when combined do not teach or suggest all the claim limitations.

It is respectfully submitted that even if combined, the cited art does ***not*** teach or suggest an integrated Fischer Tropsch process comprising isolating Fischer Tropsch derived deactivatable biocides and adding an effective amount of the Fischer Tropsch derived deactivatable biocides to the cooling water of the Fischer Tropsch process. Applicants further respectfully submit that the cited art does ***not*** disclose or suggest an integrated Fischer Tropsch process comprising the use of a Fischer-Tropsch derived deactivatable biocide and a neutralizing agent, wherein the Fischer Tropsch derived ***deactivatable biocide*** is an ***aldehyde*** and the ***neutralizing agent*** is a nitrogen-containing compound selected from the group consisting of ***primary amines, secondary amines, ammonia, amino alcohols***, and mixtures thereof or the Fischer Tropsch derived deactivatable biocide is an ***alkyne*** and the neutralizing agent is a ***hydrogenation catalyst and H_2***. Even if combined, it is further respectfully submitted that the cited art does ***not*** disclose or suggest adding an effective amount of a neutralizing agent to the cooling water to ***irreversibly*** deactivate the Fischer Tropsch derived deactivatable biocide before or upon disposal of the cooling water. Even if combined, it is respectfully submitted that the cited art does ***not*** disclose or suggest adding an effective amount of a neutralizing agent to the cooling water such that after the neutralizing agent is added, the cooling water supports visible growth of microorganisms in less than 10 days when exposed to a certified inoculum, growth media, and rapidly biodegradable substance under ambient conditions. Claims 13 – 17 and 19 are dependent upon claim 12 and thus recite further limitations.

Accordingly, it is respectfully submitted that even if Union Carbide is combined with Quann, Hitzman and Williams, the resulting combination does not disclose or suggest all the claim limitations of claim 12 or claims dependent thereon.

Therefore, withdrawal of the obviousness rejection is respectfully requested.

With regard to independent claim 20, Applicants respectfully submit that even if there were some suggestion or motivation to combine the reference teachings and a reasonable expectation of success, the cited art references even when combined do not teach or suggest all the claim limitations.

It is respectfully submitted that even if combined, the cited art does ***not*** teach or suggest an integrated Fischer Tropsch process comprising isolating Fischer Tropsch derived

deactivatable biocides and adding an effective amount of the Fischer Tropsch derived deactivatable biocides to the cooling water of the Fischer Tropsch process. Applicants further respectfully submit that the cited art does ***not*** disclose or suggest an integrated Fischer Tropsch process comprising the use of a Fischer-Tropsch derived deactivatable biocide and a neutralizing agent, wherein the Fischer Tropsch derived ***deactivatable biocide*** is an ***aldehyde*** and the ***neutralizing agent*** is a nitrogen-containing compound selected from the group consisting of ***primary amines, secondary amines, ammonia, amino alcohols***, and mixtures thereof. Even if combined, the cited art does ***not*** disclose or suggest fractionally distilling a Fischer Tropsch product stream and isolating liquid hydrocarbonaceous produts and oxygenates; subjecting the oxygenates to oxidation to form aldehydes; and adding an effective amount of the aldehydes to the cooling water of the Fischer Tropsch facility. Even if combined, it is further respectfully submitted that the cited art does ***not*** disclose or suggest adding an effective amount of a neutralizing agent to the cooling water to ***irreversibly*** deactivate the Fischer Tropsch derived deactivatable biocide (i.e., the aldehyde) before or upon disposal of the cooling water. Even if combined, it is respectfully submitted that the cited art does ***not*** disclose or suggest adding an effective amount of a neutralizing agent to the cooling water such that after the neutralizing agent is added, the cooling water supports visible growth of microorganisms in less than 10 days when exposed to a certified inoculum, growth media, and rapidly biodegradable substance under ambient conditions. Claims 21 – 23 are dependent upon claim 20 and thus recite further limitations.

Accordingly, it is respectfully submitted that even if Union Carbide is combined with Quann, Hitzman and Williams, the resulting combination does not disclose or suggest all the claim limitations of claim 20 or claims dependent thereon.

Therefore, withdrawal of the obviousness rejection is respectfully requested.

With regard to independent claim 24, Applicants respectfully submit that even if there were some suggestion or motivation to combine the reference teachings and a reasonable expectation of success, the cited art references even when combined do not teach or suggest all the claim limitations.

It is respectfully submitted that even if combined, the cited art does ***not*** teach or suggest an integrated Fischer Tropsch process comprising isolating Fischer Tropsch derived deactivatable biocides and adding an effective amount of the Fischer Tropsch derived deactivatable biocides to the cooling water of the Fischer Tropsch process. Applicants further respectfully submit that the cited art does ***not*** disclose or suggest an integrated Fischer Tropsch process comprising the use of a Fischer-Tropsch derived deactivatable biocide and a neutralizing agent, wherein the Fischer Tropsch derived ***deactivatable biocide*** is an ***alkyne*** and the ***neutralizing agent*** is a ***hydrogenation catalyst and H_2***. Even if combined, the cited art does ***not*** disclose or suggest fractionally distilling a Fischer Tropsch product stream and isolating liquid hydrocarbonaceous produts and olefins; subjecting the olefins to dehydrogenation to form alkynes; and adding an effective amount of the alkynes to the cooling water of the Fischer Tropsch facility. Even if combined, it is further respectfully submitted that the cited art does ***not*** disclose or suggest adding an effective amount of a neutralizing agent to the cooling water to ***irreversibly*** deactivate the Fischer Tropsch derived deactivatable biocide (i.e., the alkyne) before or upon disposal of the cooling water. Even if combined, it is respectfully submitted that the cited art does ***not*** disclose or suggest adding an effective amount of a neutralizing agent to the cooling water such that after the neutralizing agent is added, the cooling water supports visible growth of microorganisms in less than 10 days when exposed to a certified inoculum, growth media, and rapidly biodegradable substance under ambient conditions. Claims 25 – 28 are dependent upon claim 24 and thus recite further limitations.

Accordingly, it is respectfully submitted that even if Union Carbide is combined with Quann, Hitzman and Williams, the resulting combination does not disclose or suggest all the claim limitations of claim 24 or claims dependent thereon.

Therefore, withdrawal of the obviousness rejection is respectfully requested.

Applicants further respectfully submit that no art has been admitted that would supplement any deficiencies of the cited art as detailed above.

Accordingly, Applicants respectfully request withdrawal of the obviousness rejections.

Conclusion

For at least the reasons noted above, the art of record does not disclose or suggest the inventive concept of the present invention as defined by the claims.

In view of the foregoing amendments and remarks, reconsideration of the claims and allowance of the subject application is earnestly solicited. The Examiner is invited to contact the undersigned at the below-listed telephone number, if it is believed that prosecution of this application may be assisted thereby.

Respectfully submitted,

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